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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/751,519	12/29/2000	Min Zhu	M-8862 US	8828

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EXAMINER

MASKULINSKI, MICHAEL C

ART UNIT	PAPER NUMBER
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2184

DATE MAILED: 11/10/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/751,519

Applicant(s)

ZHU ET AL.

Examiner

Michael C Maskulinski

Art Unit

2184

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 29 December 2000.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-16 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-16 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 27 July 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) <u>4</u> . | 6) <input type="checkbox"/> Other: _____ |

Non-Final Office Action

Claim Rejections - 35 USC § 101

1. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

2. Claims 5-8 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter. Claim 5 claims a recording medium on which a program is stored and variations thereof. This claim therefore is interpreted as recording a program per se. In order to overcome this rejection, language, specifically stating the claim, must be limited to a computer program stored on a computer recordable medium executing on a computer.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

4. Claims 1-16 rejected under 35 U.S.C. 102(e) as being anticipated by Murphy et al., U.S. Patent 6,185,695 B1.

Referring to claim 1:

- a. In column 1, lines 7-11, Murphy et al. disclose that the present invention relates generally to distributed object operating systems (distributed collaborative computing)
- b. Partitioning a collaboration function into sub-functions and assigning at least one said sub-function to each of a plurality of logical processes is inherent to the distributed object operating system of Murphy et al.
- c. In column 4, lines 22-30, Murphy et al. disclose that the execution of a method for an object that resides in a remote domain is treated as a remote procedure call. The remote procedure call is handled by the object request broker (ORB), which is a distributed mechanism for handling remote procedure calls. Thus, the ORB invokes methods for objects residing in different domains from the requesting application. These remote objects can be situated in the same node as the requesting application, or in a different node (associating a respective management process with each of said plurality of logical processes, said logical processes configured so that each said logical process is capable of communicating with every other said logical process thru said respective management process; communicating between said logical processes using said respective management processes).
- d. In column 4, lines 65-67 continued in column 5, lines 1-9, Murphy et al. disclose that when a failure occurs, the failure will eventually be detected by a system process called the replica manager (monitoring said respective management process with a single supervisor process).

Art Unit: 2184

e. In column 4, lines 65-67 continued in column 5, lines 1-9, Murphy et al. disclose that the replica manager initiates a chain of events that cause software within the client to automatically retry the invocation to the secondary server (wherein said monitoring further comprises re-creating one or more said logical processes in response to detecting a failure of one or more said logical processes).

Referring to claims 2, 6, 10, and 14, in column 4, lines 65-67, Murphy et al. disclose that when a failure occurs, the failure will eventually be detected by a system process called the replica manager. Further, in column 10, lines 23-32, Murphy et al. disclose that the failure can arise if the primary server ceases to function, or ceases to process client requests in a timely manner (monitoring a message stream to determine a responsiveness of said logical process and if said responsiveness ceases, signaling said failure to said single supervisor process).

Referring to claims 3, 7, 11, and 15:

a. In column 10, lines 56-67, Murphy et al. disclose that the system selects a secondary server to replace the primary server. The replica manager selects the secondary server. The replica manager tells all clients to connect to the new primary. Then the clients invoke the object on the new primary server (spawning a new logical process and assigning to said new logical process said at least one sub-function corresponding to said failed logical process).

b. In column 11, lines 1-11, Murphy et al. disclose that a list of references to the objects specified by the hxdoor identifiers is returned to the clients. Then

when the reply is received, the clients use the normal unmarshalling mechanism to plug in the corresponding client xdoors. The system tells clients to unblock invocations to objects on the failed primary server. This allows blocked invocations to proceed to the new primary server. The system then proceeds to an end state. At this point the failover process is complete (recovering the state of said failed logical process into said new logical process and associating a new management process with said new logical process).

Referring to claims 4, 8, 12, and 16:

a. In column 8, lines 63-67 continued in column 9, lines 1-16, Murphy et al. disclose the operations involved in creating an object on a secondary server. At some point after the primary server allocates the object, the primary server initiates creation of the object on secondary server by invoking the object on the secondary server by invoking the object on the secondary server. This causes a reference to be passed from the primary server to the secondary server through the checkpointing interface (activating a stand-by logical process, had stand-by process having been instantiated prior to said detecting).

b. In column 10, lines 56-67, Murphy et al. disclose that the system selects a secondary server to replace the primary server. The replica manager selects the secondary server. The replica manager tells all clients to connect to the new primary. Then the clients invoke the object on the new primary server (assigning to said stand-by logical process said at least one sub-function corresponding to

said failed logical process and recovering the state of said failed logical process into said new logical process).

c. In column 11, lines 1-11, Murphy et al. disclose that a list of references to the objects specified by the hxdoor identifiers is returned to the clients. Then when the reply is received, the clients use the normal unmarshalling mechanism to plug in the corresponding client xdoors. The system tells clients to unblock invocations to objects on the failed primary server. This allows blocked invocations to proceed to the new primary server. The system then proceeds to an end state. At this point the failover process is complete (associating a new management process with said stand-by logical process and spawning a new stand-by logical process).

Referring to claims 5 and 9:

a. In column 14, lines 9-12, Murphy et al. disclose a program storage device storing instructions that when executed performs a method for providing transparent failover from a first server to a second server for active invocations to an object.

b. In column 1, lines 7-11, Murphy et al. disclose that the present invention relates generally to distributed object operating systems (distributed collaborative computing)

c. Partitioning a collaboration function into sub-functions and assigning at least one said sub-function to each of a plurality of logical processes is inherent to the distributed object operating system of Murphy et al.

d. In column 4, lines 22-30, Murphy et al. disclose that the execution of a method for an object that resides in a remote domain is treated as a remote procedure call. The remote procedure call is handled by the object request broker (ORB), which is a distributed mechanism for handling remote procedure calls. Thus, the ORB invokes methods for objects residing in different domains from the requesting application. These remote objects can be situated in the same node as the requesting application, or in a different node (associating a respective management process with each of said plurality of logical processes, said logical processes configured so that each said logical process is capable of communicating with every other said logical process thru said respective management process; communicating between said logical processes using said respective management processes).

e. In column 4, lines 65-67 continued in column 5, lines 1-9, Murphy et al. disclose that when a failure occurs, the failure will eventually be detected by a system process called the replica manager (monitoring said respective management process with a single supervisor process).

f. In column 4, lines 65-67 continued in column 5, lines 1-9, Murphy et al. disclose that the replica manager initiates a chain of events that cause software within the client to automatically retry the invocation to the secondary server (wherein said monitoring further comprises re-creating one or more said logical processes in response to detecting a failure of one or more said logical processes).

Art Unit: 2184

Referring to claim 13:

- a. In column 14, lines 33-37, Murphy et al. disclose a computer instruction signal embodied in a carrier wave carrying instructions that when executed by a computer, perform a method for providing transparent failover from a first server to a second server for active invocations to an object.
- b. In column 1, lines 7-11, Murphy et al. disclose that the present invention relates generally to distributed object operating systems (distributed collaborative computing)
- c. Partitioning a collaboration function into sub-functions and assigning at least one said sub-function to each of a plurality of logical processes is inherent to the distributed object operating system of Murphy et al.
- d. In column 4, lines 22-30, Murphy et al. disclose that the execution of a method for an object that resides in a remote domain is treated as a remote procedure call. The remote procedure call is handled by the object request broker (ORB), which is a distributed mechanism for handling remote procedure calls. Thus, the ORB invokes methods for objects residing in different domains from the requesting application. These remote objects can be situated in the same node as the requesting application, or in a different node (associating a respective management process with each of said plurality of logical processes, said logical processes configured so that each said logical process is capable of communicating with every other said logical process thru said respective

Art Unit: 2184

management process; communicating between said logical processes using said respective management processes).

e. In column 4, lines 65-67 continued in column 5, lines 1-9, Murphy et al. disclose that when a failure occurs, the failure will eventually be detected by a system process called the replica manager (monitoring said respective management process with a single supervisor process).

f. In column 4, lines 65-67 continued in column 5, lines 1-9, Murphy et al. disclose that the replica manager initiates a chain of events that cause software within the client to automatically retry the invocation to the secondary server (wherein said monitoring further comprises re-creating one or more said logical processes in response to detecting a failure of one or more said logical processes).

Conclusion

5. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

US 2003/0159084 A1	Murphy et al.
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U.S. Patent 6,412,079 B1	Edmonds et al.
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U.S. Patent 6,247,141 B1	Holmberg
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U.S. Patent 6,275,953 B1	Vahalia et al.
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U.S. Patent 5,696,895	Hemphill et al.
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U.S. Patent 5,526,492	Ishida
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Art Unit: 2184

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael C Maskulinski whose telephone number is (703) 308-6674. The examiner can normally be reached on Monday-Friday 9:30-6:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert W Beausoliel can be reached on (703) 305-9713. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-3900.

MM


ROBERT BEAUSOLIEL
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2100